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How can space technologies be used effectively for sustainable development?

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Various properties of space technologies both **enable** and **prevent** their ability to help achieve the sustainable development goals (SDGs).

Property 1: Acquiring multiple types of data remotely

Earth Observation (EO) satellites, remote sensors.

Enables development:

- Using EO data, farmers can improve agricultural practices.
- Early warning systems for disasters can be produced.
- Damage assessments following disasters can be conducted.

Prevents development:

- Privacy breaches and human rights abuses have occurred using EO data.
- Skills shortages prevent low-income countries and marginalized groups from accessing EO data, which is complex to analyse. This can lead to inequalities in space benefits.

Click left satellite wing for more information on satellites and remote sensors in development

Property 2: Transmitting data to remote areas

Telecommunication satellites.

Enables development:

- Access to the internet in rural areas.

Prevents development:

- Privacy breaches.

Property 3: Robustness of infrastructure

Satellites, remote sensors, humanoid robots.

Enables development:

- Space technologies can reliably withstand extreme conditions.
- Humanoid robots could aid disaster relief missions by performing complex operations in dangerous environments. This use of robots is still in pilot stages.

Prevents development:

- High infrastructure costs make space technologies inaccessible to low-income countries.
- Given their military history, humanoid robots in humanitarian settings have the potential to be used in military operations.

Click robot for more information on humanoid robots in development

Further areas for research:

How can space technologies be made more accessible to low-income countries and marginalized communities?
To address the problem of skills shortages, how can lasting institutional capacities in space applications be built?
How can human rights abuses through space technologies be safeguarded against?